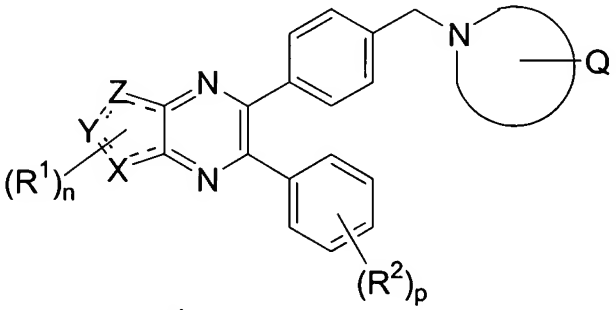
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Original) A compound of the formula A:

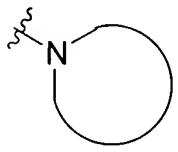


A

wherein:

n is 0, 1, 2 or 3;
p is 0, 1, 2 or 3;
r is 0 or 1;
s is 0 or 1;
m is 0 or 1;
a is 0 or 1;
b is 0 or 1;

X, Y and Z are independently selected from: C, N, S or O provided that at least one of X, Y or Z is N, S or O;



is: heterocycle, optionally substituted with one to three R^z;

Q is selected from: H, $-NR^5R^6$ and heterocycle, said heterocycle which is optionally substituted with one to three R^z;

R^1 and R^2 are independently selected from:

1) $(C=O)_aO_bC_1$-C_{10} alkyl,
2) $(C=O)_aO_b$aryl,
3) C_2-C_{10} alkenyl,
4) C_2-C_{10} alkynyl,

5) $(C=O)_aO_b$ heterocyclyl,
6) $(C=O)_aO_bC_3$-C_8 cycloalkyl,
7) CO_2H,
8) halo,
9) CN,
10) OH,
11) O_bC_1-C_6 perfluoroalkyl,
12) $O_a(C=O)_bNR^3R^4$,
13) $NR^c(C=O)NR^3R^4$,
14) $S(O)_mR^a$,
15) $S(O)_2NR^3R^4$,
16) $NR^cS(O)_mR^a$,
17) oxo,
18) CHO,
19) NO_2,
20) $NR^c(C=O)O_bR^a$,
21) $O(C=O)O_bC_1$-C_{10} alkyl,
22) $O(C=O)O_bC_3$-C_8 cycloalkyl,
23) $O(C=O)O_b$aryl, and
24) $O(C=O)O_b$-heterocycle,

said alkyl, aryl, alkenyl, alkynyl, heterocyclyl, and cycloalkyl optionally substituted with one or more substituents selected from R^z;

R^3 and R^4 are independently selected from:

1) H,
2) $(C=O)_aO_bC_1$-C_{10} alkyl,
3) $(C=O)_aO_b$aryl,
4) C_2-C_{10} alkenyl,
5) C_2-C_{10} alkynyl,
6) $(C=O)_aO_b$ heterocyclyl,
7) $(C=O)_aO_bC_3$-C_8 cycloalkyl,
8) OH,
9) C_1-C_6 perfluoroalkyl,
10) $S(O)_mR^a$, and
11) CHO,

said alkyl, cycloalkyl, aryl, heterocylyl, alkenyl, and alkynyl is optionally substituted with one or more substituents selected from R^z, or

R^3 and R^4 can be taken together with the nitrogen to which they are attached to form a monocyclic or bicyclic heterocycle with 4-7 members in each ring and optionally containing, in addition to the nitrogen, 1-3 heteroatoms selected from N, O and S, said monocyclic or bicyclic heterocycle optionally substituted with one or more substituents selected from R^z;

R^5 and R^6 are independently selected from:

1) H,
2) $(C=O)_aO_bC_1$-C_{10} alkyl,
3) $(C=O)_aO_b$aryl,
4) C_2-C_{10} alkenyl,
5) C_2-C_{10} alkynyl,
6) $(C=O)_aO_b$ heterocyclyl,
7) $(C=O)_aO_bC_3$-C_8 cycloalkyl,
8) OH,
9) C_1-C_6 perfluoroalkyl,
10) $(C=O)NR^3R^4$,
11) $S(O)_mR^a$,
12) $S(O)_2NR^3R^4$, and
13) CHO,

said alkyl, cycloalkyl, aryl, heterocylyl, alkenyl, and alkynyl is optionally substituted with one or more substituents selected from R^z, or

R^5 and R^6 can be taken together with the nitrogen to which they are attached to form a monocyclic or bicyclic heterocycle with 4-7 members in each ring and optionally containing, in addition to the nitrogen, 1-3 heteroatoms selected from N, O and S, said monocyclic or bicyclic heterocycle optionally substituted with one or more substituents selected from R^z;

R^z is selected from:

1) $(C=O)_rO_s(C_1$-$C_{10})$alkyl,
2) $O_r(C_1$-$C_3)$perfluoroalkyl,
3) $(C_0$-$C_6)$alkylene-$S(O)_mR^a$,
4) oxo,
5) OH,

6) halo,
7) CN,
8) $(C=O)_rO_s(C_2\text{-}C_{10})$alkenyl,
9) $(C=O)_rO_s(C_2\text{-}C_{10})$alkynyl,
10) $(C=O)_rO_s(C_3\text{-}C_6)$cycloalkyl,
11) $(C=O)_rO_s(C_0\text{-}C_6)$alkylene-aryl,
12) $(C=O)_rO_s(C_0\text{-}C_6)$alkylene-heterocyclyl,
13) $(C=O)_rO_s(C_0\text{-}C_6)$alkylene-$N(R^b)_2$,
14) $C(O)R^a$,
15) $(C_0\text{-}C_6)$alkylene-CO_2R^a,
16) C(O)H,
17) $(C_0\text{-}C_6)$alkylene-CO_2H,
18) $C(O)N(R^b)_2$,
19) $S(O)_mR^a$,
20) $NR^c(C=O)O_bR^a$,
21) $O(C=O)O_bC_1\text{-}C_{10}$ alkyl,
22) $O(C=O)O_bC_3\text{-}C_8$ cycloalkyl,
23) $O(C=O)O_b$aryl, and
24) $O(C=O)O_b$-heterocycle,

said alkyl, alkenyl, alkynyl, cycloalkyl, aryl, and heterocyclyl is optionally substituted with up to three substituents selected from R^b, OH, $(C_1\text{-}C_6)$alkoxy, halogen, CO_2H, CN, $O(C=O)C_1\text{-}C_6$ alkyl, oxo, and $N(R^b)_2$;

R^a is substituted or unsubstituted $(C_1\text{-}C_6)$alkyl, substituted or unsubstituted $(C_2\text{-}C_6)$alkenyl, substituted or unsubstituted $(C_2\text{-}C_6)$alkynyl, substituted or unsubstituted $(C_3\text{-}C_6)$cycloalkyl, substituted or unsubstituted aryl, $(C_1\text{-}C_6)$perfluoroalkyl, 2,2,2-trifluoroethyl, or substituted or unsubstituted heterocyclyl; and

R^b is H, $(C_1\text{-}C_6)$alkyl, substituted or unsubstituted aryl, substituted or unsubstituted benzyl, substituted or unsubstituted heterocyclyl, $(C_3\text{-}C_6)$cycloalkyl, $(C=O)OC_1\text{-}C_6$ alkyl, $(C=O)C_1\text{-}C_6$ alkyl or $S(O)_2R^a$;

R^c is selected from:

1) H,
2) $C_1\text{-}C_{10}$ alkyl,
3) aryl,

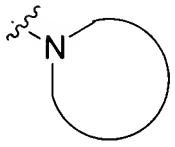
4) C_2-C_{10} alkenyl,
5) C_2-C_{10} alkynyl,
6) heterocyclyl,
7) C_3-C_8 cycloalkyl,
8) C_1-C_6 perfluoroalkyl,

said alkyl, cycloalkyl, aryl, heterocylyl, alkenyl, and alkynyl is optionally substituted with one or more substituents selected from R^z;

or a pharmaceutically acceptable salt or a stereoisomer thereof.

2. (Original) The compound according to Claim 1 wherein:

n is 0 or 1;



is: heterocycle selected from 2-azepinone, benzimidazolyl, benzimidazolonyl,
2-diazapinone, imidazolyl, 2-imidazolidinone, indolyl, isoquinolinyl, morpholinyl, piperidyl, piperazinyl, pyridyl, pyrrolidinyl, 2-piperidinone, 2-pyrimidinone, 2-pyrollidinone, quinolinyl, tetrahydrofuryl, tetrahydroisoquinolinyl, and thienyl, said heterocycle optionally substituted with one to three R^z;

Q is selected from: H and $-NR^5R^6$;

R^1 and R^2 are independently selected from:

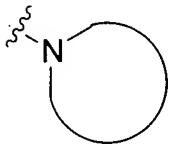
1) $(C{=}O)_aO_bC_1$-C_{10} alkyl,
2) $(C{=}O)_aO_b$aryl,
3) C_2-C_{10} alkenyl,
4) C_2-C_{10} alkynyl,
5) $(C{=}O)_aO_b$ heterocyclyl,
6) $(C{=}O)_aO_bC_3$-C_8 cycloalkyl,
7) CO_2H,
8) halo,
9) CN,
10) OH,
1) O_bC_1-C_6 perfluoroalkyl,

2) $S(O)_mR^a$,
3) $NR^cS(O)_mR^a$,
4) oxo,
5) CHO,
6) NO_2,
7) $NR^c(C=O)O_bR^a$,
8) $O(C=O)O_bC_1$-C_{10} alkyl,
9) $O(C=O)O_bC_3$-C_8 cycloalkyl,
10) $O(C=O)O_b$aryl,
11) $O(C=O)O_b$-heterocycle, and
12) NH_2,

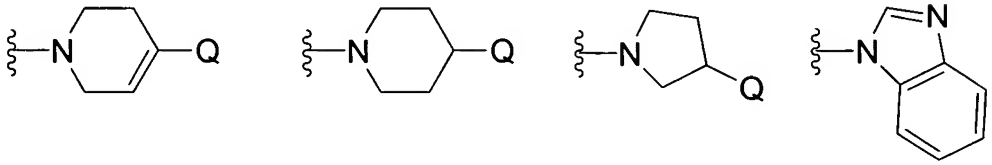
said alkyl, aryl, alkenyl, alkynyl, heterocyclyl, and cycloalkyl optionally substituted with one or more substituents selected from R^z;

or a pharmaceutically acceptable salt or a stereoisomer thereof.

3. (Original) The compound according to Claim 2 wherein:



is: heterocycle selected from



said heterocycle optionally substituted with one to three R^z;

Q is selected from: $-NR^5R^6$;

R^5 and R^6 are independently selected from:

1) H,
2) $(C=O)_aO_bC_1$-C_{10} alkyl,
3) $(C=O)_aO_b$aryl,
4) C_2-C_{10} alkenyl,

5) C_2-C_{10} alkynyl,
6) $(C=O)_aO_b$ heterocyclyl,
7) $(C=O)_aO_bC_3$-C_8 cycloalkyl,
8) OH,
9) C_1-C_6 perfluoroalkyl,
10) $S(O)_mR^a$, and
11) CHO,

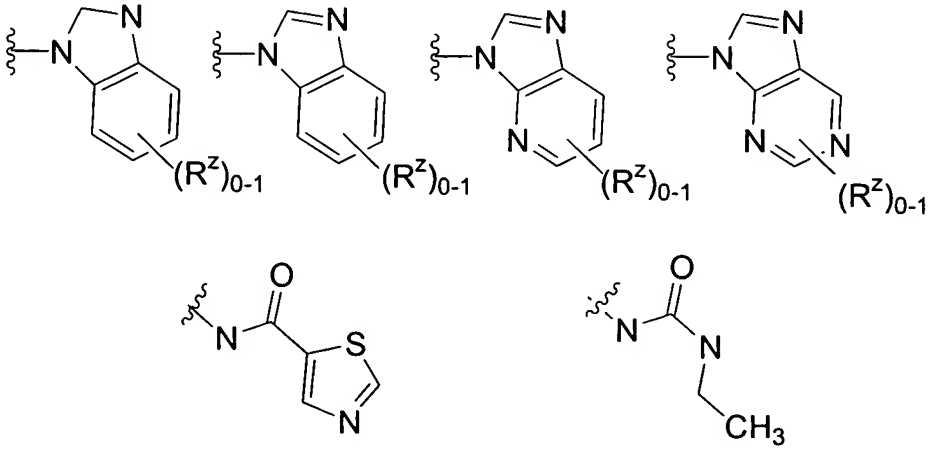
said alkyl, cycloalkyl, aryl, heterocylyl, alkenyl, and alkynyl is optionally substituted with one or more substituents selected from R^z, or

R^5 and R^6 can be taken together with the nitrogen to which they are attached to form a monocyclic or bicyclic heterocycle with 4-7 members in each ring and optionally containing, in addition to the nitrogen, 1-3 heteroatoms selected from N, O and S, said monocyclic or bicyclic heterocycle optionally substituted with one or more substituents selected from R^z;

or a pharmaceutically acceptable salt or a stereoisomer thereof.

4. (Original) The compound according to Claim 3 wherein:

Q is selected from:



wherein R^z can attach anywhere on the bicyclic structure;

R^1 and R^2 are independently selected from:

1) $(C_1$-$C_6)$alkyl,
2) $(C_1$-$C_{10})$alkyl-OH

3) CO_2H,
4) halo,
5) CN,
6) OH,
7) oxo,
8) CHO,
9) NO_2, and
10) NH_2

R^z is independently selected from:

1) $(C_1\text{-}C_6)$alkyl,
2) $(C_1\text{-}C_{10})$alkyl-OH
3) CO_2H,
4) halo,
5) CN,
6) OH,
7) oxo,
8) CHO,
9) NO_2, and
10) NH_2

or a pharmaceutically acceptable salt or a stereoisomer thereof.

5. (Original) A compound which is selected from:

1-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

N-ethyl-*N*'-{(3*R*)-1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]pyrrolidin-3-yl}urea;

N-{(3*R*)-1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]pyrrolidin-3-yl}-1,3-thiazole-5-carboxamide;

9-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-9*H*-purin-6-amine;

2-(4-{[4-(3*H*-imidazo[4,5-*b*]pyridin-3-yl)piperidin-1-yl]methyl}phenyl)-3-phenylthieno[3,4-*b*]pyrazine;

9-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-9*H*-purine;

{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]-1*H*-benzimidazol-2-yl}methanol;

2-{4-[(2-methyl-1*H*-benzimidazol-1-yl)methyl]phenyl}-3-phenylthieno[3,4-*b*]pyrazine;

1-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]-1,2,3,6-tetrahydropyridin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

N-{(3*R*)-1-[4-(3-hydroxy-5-phenyl-2*H*-pyrazolo[3,4-*b*]pyrazin-6-yl)benzyl]pyrrolidin-3-yl}-1,3-thiazole-5-carboxamide; and

1-{1-[4-(3-hydroxy-5-phenyl-2*H*-pyrazolo[3,4-*b*]pyrazin-6-yl)benzyl]piperidin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

or a pharmaceutically acceptable salt or a stereoisomer thereof.

6. (Original) The TFA salt of a compound according to Claim 1 which is:

1-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

N-ethyl-*N*'-{(3*R*)-1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]pyrrolidin-3-yl}urea;

N-{(3*R*)-1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]pyrrolidin-3-yl}-1,3-thiazole-5-carboxamide;

9-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-9*H*-purin-6-amine;

2-(4-{[4-(3*H*-imidazo[4,5-*b*]pyridin-3-yl)piperidin-1-yl]methyl}phenyl)-3-phenylthieno[3,4-*b*]pyrazine;

9-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-9*H*-purine;

{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]-1*H*-benzimidazol-2-yl}methanol;

2-{4-[(2-methyl-1*H*-benzimidazol-1-yl)methyl]phenyl}-3-phenylthieno[3,4-*b*]pyrazine;

1-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]-1,2,3,6-tetrahydropyridin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

N-{(3*R*)-1-[4-(3-hydroxy-5-phenyl-2*H*-pyrazolo[3,4-*b*]pyrazin-6-yl)benzyl]pyrrolidin-3-yl}-1,3-thiazole-5-carboxamide; and

1-{1-[4-(3-hydroxy-5-phenyl-2*H*-pyrazolo[3,4-*b*]pyrazin-6-yl)benzyl]piperidin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

or a stereoisomer thereof.

7. (Original) A compound according to Claim 5 which is selected from:

1-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

or a pharmaceutically acceptable salt or a stereoisomer thereof.

8. (Original) A pharmaceutical composition comprising a pharmaceutical carrier, and dispersed therein, a therapeutically effective amount of a compound of Claim 1.

9. (Original) A pharmaceutical composition comprising a pharmaceutical carrier, and dispersed therein, a therapeutically effective amount of a compound of Claim 6.

10-22. (Canceled)